

MODERN VACCINES ADJUVANTS FORMULATION

18-20 May 2016, Eigtveds Pakhus, Copenhagen, Denmark

FINAL ORAL PROGRAMME & POSTER PROGRAMME MVAF 2016

SCIENTIFIC ADVISORY PANEL

Conference Chairmen: Peter Andersen (*SSI, Copenhagen, Denmark*) and Dennis Christensen (*SSI, Copenhagen, Denmark*)

Nathalie Garcon (*BIOASTER Research Technology Institute, Lyon, France*)

Adriana Baz Morelli (*CSL Ltd, Melbourne, Australia*)

Jean Haensler (*Sanofi Pasteur, Lyon, France*)

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Heather Davis (*Seqirus, Maidenhead, Berkshire, UK*)

Chris Fox (*IDRI, Seattle, Washington, USA*)

Nicolas Collin (*University of Lausanne, Lausanne, Switzerland*)

Stephaen Ascarateil (*SEPPIC, Paris, France*)

Quentin Sattentau (*University of Oxford, Oxford, UK*)

Ken Ishii (*University of Osaka, Osaka, Japan*)

Erik Lindblad (*Brenntag Biosector, Frederikssund, Denmark*)

Gideon Kersten (*Intravacc, Bilthoven, The Netherlands*)

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08.30
Arrival & Registration

09:30-09:45

Welcome to Copenhagen & Opening Remarks

Dennis Christensen
(Statens Serum Institut, Copenhagen, Denmark)

**SESSION 1:
OPENING PLENARY SESSION**

Session Moderator: Erik Lindblad
(Brenntag Biosector, Denmark)

09:45-10:15

'Formulation development of TLR7/8 Ligands: Applications in influenza, HIV and amebiasis'

Chris Fox
(IDRI, Seattle, Washington, USA)

10:15-10:45

'Mechanism of action of liposomal vaccine delivery systems'

Dennis Christensen
(Statens Serum Institut, Copenhagen, Denmark)

10:45-11:00

Wrap-up by Session Moderator

11:00-11:30

Coffee Break & Poster Set-up

**SESSION 2:
VACCINES & ADJUVANTS PROPERTIES**

Session Moderator: Dennis Christensen
(SSI, Copenhagen, Denmark)

11:30-12:00

'Pathogen camouflage: Implications for vaccine design'

Oreda Boussadia², Frances Terry¹, Leonard Moise^{1,2}, William Martin¹
and Anne S. De Groot^{1,2}
(1 University of Rhode Island, Providence, Rhode Island, USA; 2 EpiVax, USA)

12:00-12:30

'Microcrystalline tyrosine as a tested and registered adjuvant for use in prophylactic vaccines'

Martin Bachmann
(University of Zurich, Zurich, Switzerland)

12:30-12:45

Wrap-up by Session Moderator

12:45-14:00

Lunch Break & Posters

**SESSION 3:
VACCINE DESIGN**

Session Moderator: Nicolas Collin
(University of Lausanne, Lausanne, Switzerland)

14:00-14:30

'Chemical modification of HIV-1 Env to induce neutralising antibodies'

Quentin Sattentau
(University of Oxford, Oxford, UK)

14.30-15.00

'Recombinant MERS S nanoparticles induce neutralizing antibody that inhibits MERS-CoV *in vivo*'

David Flyer
(Novavax Inc, Gaithersburg, Maryland, USA)

15:00-15:20

'Construction of novel vaccine adjuvants using RNA nanotechnology'

Peixuan Guo
(University of Kentucky, Lexington, Kentucky, USA)

15:20-15:40

'Insights to the mechanism of action of the mucosal adjuvant Endocine'

Anna-Karin Maltais (Eurocine Vaccines AB, Solna, Sweden)

15:40-16:00

Tea Break & Posters

**SESSION 3 (CONTINUED):
VACCINE DESIGN**

Session Moderator: Quentin Sattentau
(University of Oxford, Oxford, UK)

16:00-16:30

'The adjuvant properties of the toll-like receptor 7/8 agonist 3M-052'

Mark Tomai
(3M Company, St Paul, Minnesota, USA)

16.30-16.50

'Novel liposomal formulation for *in vivo* expansion of CD8 T cells against whole protein antigens'

Jackson K. Eby, Adrienne V. Li, Yunwei Sun and Peter C. DeMuth
(Vedanta Pharmaceuticals, Inc., Cambridge, Massachusetts, USA)

16:50-17:10

'Bacterial superglue enables easy development of efficient virus-like particle based vaccines'

Susan Thrane, Christoph M. Janitzek, Mette Ø. Agerbæk, Sisse B. Ditlev, Mafalda Resende, Morten A. Nielsen, Thor G. Theander, Ali Salanti and Adam F. Sander
(University of Copenhagen and Copenhagen University Hospital, Copenhagen, Denmark)

17:10-17:25

Wrap-up by Session Moderator

17:30-19:30

Copenhagen Canal Boat Trip & Reception

Sponsored by Brenntag Biosector



SESSION 4: VACCINES AND VACCINATION

Session Moderator: Jean Haensler
(Sanofi Pasteur, Lyon, France)

09:00-09:30

'Optimization of aluminum salts formulations for inactivated poliovirus vaccine dose-sparing'

Livia Brunner
(University of Lausanne, Epalinges, Switzerland)

09:30-10:00

'New adjuvants for FMD vaccines'

Satya Parida
(The Pirbright Institute, Guildford, UK)

10:00-10:30

'A novel vaccination protocol for the induction of local IgA responses against genital C. trachomatis infections – the key role of vaccine-induced Th17 cells'

Frank Follmann
(Statens Serum Institut, Copenhagen, Denmark)

10:30-10:45

Wrap-up by Session Moderator

10:45-11:25

Coffee Break & Posters

SESSION 5: SHORT POSTER PRESENTATIONS

Session Moderator: Dennis Christensen
(Statens Serum Institut, Copenhagen, Denmark)

11:25-11:40 – POSTERS 108 & 109

'Novel carbohydrate monosulphate ester (CMS) adjuvants with high E/T-ratio and their potentials for single-shot vaccines'

Luuk Hilgers, Peter Paul Platenburg, Anneke Blom, Jeffrey Bajramovic and Han van den Bosch
(LiteVax BV, Oss, The Netherlands)

11:40-11:55 – POSTER 103

'Recombinant lipopeptide-based cancer immunotherapy'

Shih-Jen Liu and Chih-Hsiang Leng
(National Institute of Infectious Diseases and Vaccinology and National Health Research Institutes, Miaoli, Taiwan)

11:55-12:10 – POSTER 104

'Recombinant lipoprotein induces broad spectrum of cellular and humoral immune responses without exogenous adjuvant formulation'

Chen-Yi Chiang¹, Shih-Jen Liu^{1,2}, Chun-Hsiang Hsieh¹, Mei-Yu Chen¹, Jy-Ping Tsai¹, Hsueh-Hung Liu¹, I-Hua Chen¹, Pele Chong^{1,2}, Chih-Hsiang Leng^{1,2} and Hsin-Wei Chen^{1,2}

(¹ National Institute of Infectious Diseases and Vaccinology, Miaoli, Taiwan; ² National Health Research Institute, Miaoli, Taiwan)

12:10-12:25 – POSTER 113

'Adjuvanting a viral vectored vaccine against pre-erythrocytic malaria: modulation of CD8 T cell responses and correlates of protection'

Anita Milicic¹, Christine Rollier², Choon Kit Tang¹, Karolis Bauza¹, Rhea Longley³, Adrian V.S. Hill¹ and Arturo Reyes-Sandoval⁴
(¹ The Jenner Institute, Nuffield Department of Medicine, University of Oxford, Oxford, UK; ² Oxford Vaccine Group, University of Oxford and the NIHR Oxford Biomedical Research Centre, Churchill Hospital, Oxford, UK; ³ Population Health and Immunity, Walter & Eliza Hall Institute, Parkville, Australia and Mahidol Vivax Research Unit (MVRU), Mahidol University, Bangkok, Thailand; ⁴ The Jenner Institute, Nuffield Department of Medicine, University of Oxford, Oxford, UK)

12:25-12:35 – POSTER 111

'Overcoming the cold-chain distribution hurdle: Development of a lyophilized thermostable single vial adjuvanted vaccine against tuberculosis'

Michelle Y. Chan, Alicia M. Schwartz, Dawn M. Fedor, Quinton M. Dowling, Elyse A. Beebe, Liam Kapilow-Cohen, Thomas S. Vedvick, Mark T. Orr, Christopher B. Fox and Ryan M. Kramer
(Infectious Disease Research Institute (IDRI), Seattle, Washington, USA)

12:35-12:45

Wrap-up by Session Moderator

12:45-14:00

Lunch Break & Posters

SESSION 6: VACCINE & ADJUVANT FORMULATION

Session Moderator: Manmohan Singh
(Takeda Vaccines Inc., Morrisville, North Carolina, USA)

14:00-14:30

'Challenges in development of formulations with adjuvants'

Lakshmi Khandke
(Pfizer Vaccine Research, Pearl River, New York, USA)

14:30-15:00

'Formulation of vaccines/adjuvants with Microfluidizers and upscalable methods'

Yvonne Perrie
(Aston University, Aston, Birmingham, UK)

15:00-15:30

'Formulation of influenza T cell peptides'

Gideon Kersten
(Intravacc, Bilthoven, The Netherlands)

15:30-16:00

'Activation of innate and adaptive immune responses by formulation with a polymer-based combination adjuvant'

S. van Drunen Littel-van den Hurk^{1,2}, R. Garg¹, I. Sarkar^{1,2}, V. Gerdtts^{1,3} and A. Potter^{1,3}
(¹ VIDO-Intervac: 2 Microbiology & Immunology, Veterinary Microbiology; ³ University of Saskatchewan, Saskatoon, Canada)

16:00-16:30

Tea Break & Posters

16:30-17:00

'Immunostimulating saponin-based nanoparticles: NanoQuil™ adjuvant'

Kefei Hu
(Brenntag Biosector, Frederikssund, Denmark)

17:00-17:30

'Insights to the mechanism of action of the mucosal adjuvant Endocrine'

Anna-Karin Maltais
(Eurocine Vaccines AB, Solna, Sweden)

17:30-17:40

Wrap-up by Session Moderator

SESSION 7: VACCINE AND ADJUVANT CHARACTERIZATION

Session Moderator: Chris Fox
(IDRI, Seattle, Washington, USA)

09:00-09:20

'The use of FACS analysis for detecting antigen interaction with mineral adjuvants'

Laurent Duroux
(Brenntag Biosector, Frederikssund, Denmark)

09:20-09:40

'High precision protein folding analysis in drug discovery and formulation development by nanoDSF'

Teresa Hallström¹, Dennis Breitsprecher¹, Melanie Maschberger¹, Stefanie Hüttl², Thomas Müller², Stefan Duhr¹ and Philipp Baaske¹
(¹ NanoTemper Technologies GmbH, Munich, Germany; ² Julius-von-Sachs Institute, University Wuerzburg, Wuerzburg, Germany)

09:40-10:00

'Development and characterization of the novel adjuvant CAF09b'

Ida Svahn Rasmussen
(Statens Serum Institut, Copenhagen, Denmark)

10:00-10:20

'Characteristics of adjuvants designed for therapeutic cancer vaccines'

Aude Puget
(SEPPIC, Paris, France)

10:20-10:40

Wrap-up by Session Moderator

10:40-11:00

Coffee Break and Poster Breakdown

SESSION 8: VACCINES/ADJUVANTS & DELIVERY

Session Moderator: Gideon Kersten
(Intravacc, Bilthoven, The Netherlands)

11:00-11:30

'Implications for the quality of cellular and humoral responses after antigen delivery on nanoparticles and polymersomes'

Marcela Rincon-Restrepo, Aaron Mayer, Clara Galan-Navarro, Sylvie Hauert, Stefan Kunz, Sachiko Hirotsue, Jeffrey Hubbelland and Melody Swartz
(Ecole Polytechnique Fédérale de Lausanne/University of Lausanne, Lausanne, Switzerland and University of Chicago, Chicago, Michigan, USA)

11:30-11:50

'Lipovaxin, nano-particulate chelating lipid-based immunostimulatory particles for improved recombinant vaccine formulations'

Jason D. Price, Nicola C. MacLennan, Anthony D. Rusden, Katharine M. Gosling and Ines I.C. Atmosukarto
(Lipotek Pty Ltd, New Acton, Canberra, Australia)

11:50-12:10

'Targeting of cross presenting dendritic cells in the lymphoid tissue: The importance of choosing the correct administration route'

Signe T. Schmidt
(Statens Serum Institut, Copenhagen, Denmark)

12:10-12:30

'Aluminum nanoparticle adjuvant for intradermal vaccines'

Jean Haensler
(Sanofi Pasteur, Lyon, France)

12:30-12:50

'An anti-Abeta liposome vaccine shows efficacy in a Down Syndrome (DS) mouse model'

Emma Fiorini
(AC Immune SA, Lausanne, Switzerland)

12:50-13:00

Wrap-up by Session Moderator

13:00-14:00

Lunch Break & Poster Breakdown

SESSION 9: LATEBREAKER PRESENTATIONS

Moderator: To be confirmed

14:00-14:30

'The role of electrostatic interactions in vaccine processing, stability and post-injection phenomena'

Henryk Mach, Pat Ahl, David Thirirot, Erin-Green Trexler, Bei Wang and Jeffrey Blue
(Merck Research Laboratories, West Point, Pennsylvania, USA)

14:30-14:50

'Nanoformulation of synergistic TLR ligands to enhance protective immunity against Entamoeba histolytica'

Mayuresh M Abhyankar¹, Zannatun Noor¹, Lisa Barroso², David Lyerly², Christopher B Fox³ and William A Petri, Jr.¹
(¹ University of Virginia, Charlottesville, Virginia, USA; ² TechLab, Inc., Blacksburg, Virginia, USA; ³ Infectious Disease Research Institute, Seattle, Washington, USA)

14:50-15:10

'Powerful complex immunoadjuvant based on synergistic effect of combined TLR4 and NOD2 activation significantly enhances magnitude of humoral and cellular adaptive immune responses'

Amir I. Tukhvatulin, Alina S. Dzhurullaeva, Natalia M. Tukhvatulina, Inna V. Dolzhikova, Boris S. Naroditsky, Alexander L. Gintsburg and Denis Y. Logunov
(N. F. Gamaleya Research Center for Epidemiology and Microbiology, Moscow, Russia)

15:10-15:20

MVAF 2016 Summary & Conference Close

* This final programme is correct at the time of publication. However the organizers reserve the right to make any alterations that may be required in the interests and integrity of the conference programme.

Poster 101

'A live *Salmonella gallinarum* vaccine candidate secreting an adjuvant protein confers enhanced safety and protection against fowl typhoid'

John Hwa Lee
(College of Veterinary Medicine, Chonbuk National University, Iksan, South Korea)

Poster 102

'Evaluation of *Salmonella gallinarum* ghost formulated with montanidetm ISA70 VG-adjuvant as a vaccine against fowl typhoid'

John Hwa Lee
(College of Veterinary Medicine, Chonbuk National University, Iksan, South Korea)

Poster 103

'Recombinant lipopeptide-based cancer immunotherapy'

Shih-Jen Liu and Chih-Hsiang Leng
(National Institute of Infectious Diseases and Vaccinology, National Health Research Institutes, Miaoli, Taiwan)

Poster 104

'Recombinant lipoprotein induces broad spectrum of cellular and humoral immune responses without exogenous adjuvant formulation'

Chen-Yi Chiang¹, Shih-Jen Liu^{1,2}, Chun-Hsiang Hsieh¹, Mei-Yu Chen¹, Jy-Ping Tsai¹, Hsueh-Hung Liu¹, I-Hua Chen¹, Pele Chong^{1,2}, Chih-Hsiang Leng^{1,2} and Hsin-Wei Chen²
(¹ National Institute of Infectious Diseases and Vaccinology, National Health Research Institutes, Miaoli, Taiwan)

Poster 105

'Immune response in mice and chickens using novel phosphazene adjuvants'

J. V. van den Hurk, V. Gerdtts, G. Mutwiri, W. Koester, S. Strom, D. Dent, S. Lam and S. Attah-Poku
(VIDO-Intervac, University of Saskatchewan, Saskatoon, Canada)

Poster 106

'Manufacturing of PLGA nanoparticles as vaccine adjuvants by using microfluidics'

Carla B. Roces Rodriguez¹, Dennis Christensen² and Yvonne Perrie¹
(¹ University of Strathclyde, Glasgow, UK; ² Statens Serum Institut, Copenhagen, Denmark)

Poster 107

'Advx enhances different types of adaptive immune response dependent upon antigen properties'

Masayuki Hayashi^{1,2,3}, Taiki Aoshi^{1,3}, Cevayir Coban⁴, Nikolai Petrovsky⁵ and Ken J Ishii^{1,3}
(¹ National Institute of Biomedical Innovation, Health and Nutrition (NIBIOHN), Japan; ² Mitsubishi Tanabe Pharma Corporation, Japan; ³ Osaka University, Osaka, Japan; ⁴ Laboratory of Malaria Immunology, WPI Immunology Frontier Research Center, Osaka University, Osaka, Japan; ⁵ Vaxine Pty Ltd, Australia)

Poster 108

'Novel carbohydrate monosulphate ester (CMS) adjuvant'

Luuk Hilgers¹, Jeffrey Bajramovic², Peter Paul Platenburg¹ and Han van den Bosch¹
(¹ LiteVax BV, Oss, the Netherlands; ² BPRC, Rijswijk, The Netherlands)

Poster 109

'Feasibility of single-shot vaccines with a more effective adjuvant'

Peter Paul Platenburg, Luuk Hilgers and Han van den Bosch
(LiteVax BV, Oss, The Netherlands)

Poster 110

'Intranasal hydroxypropyl- β -cyclodextrin (HP- β -CD)-adjuvanted influenza vaccine protects against sub-heterologous virus infection'

Takato Kusakabe^{1,2}, Etsushi Kuroda² and Ken J Ishii^{1,2}
(¹ Laboratory of Adjuvant Innovation, National Institute of Biomedical Innovation; ² WPI Immunology Frontier Research Center, Osaka University, Osaka, Japan)

Poster 111

'Overcoming the cold-chain distribution hurdle: Development of a lyophilized thermostable single vial adjuvanted vaccine against tuberculosis'

Michelle Y. Chan, Alicia M. Schwartz, Dawn M. Fedor, Quinton M. Dowling, Elyse A. Beebe, Liam Kapilow-Cohen, Thomas S. Vedvick, Mark T. Orr, Christopher B. Fox and Ryan M. Kramer
(Infectious Disease Research Institute (IDRI), Seattle, Washington, USA)

Poster 112

'MicroScale Thermophoresis: Interaction analysis and beyond'

Teresia Hallström, Moran Jerabek-Willemsen, Timon André, Randy Wanner, Heide Marie Roth, Stefan Duhr, Philipp Baaske and Dennis Breitsprecher
(Nanotemper Technologies GmbH, Munich, Germany)

Poster 113

'Adjuvanting a viral vectored vaccine against pre-erythrocytic malaria: modulation of CD8 T cell responses and correlates of protection'

Anita Milicic¹, Christine Rollier², Choon Kit Tang¹, Karolis Bauza¹, Rhea Longley³, Adrian V.S. Hill¹ and Arturo Reyes-Sandoval⁴
(¹ The Jenner Institute, Nuffield Department of Medicine, University of Oxford, Oxford, UK; ² Oxford Vaccine Group, University of Oxford and the NIHR Oxford Biomedical Research Centre, Churchill Hospital, Oxford, UK; ³ Population Health and Immunity, Walter & Eliza Hall Institute, Parkville, Australia and Mahidol Vivax Research Unit (MVRU), Mahidol University, Bangkok, Thailand; ⁴ The Jenner Institute, Nuffield Department of Medicine, University of Oxford, Oxford, UK)

Poster 114

'Squalene adjuvant formulation with β -carotene II. Influence of β -carotene on antigenic effectivity of adjuvanted rabies vaccine'

A. Ondrejková, J. Süli, P. Cechvala, M. Prokeš, Z. Benko and R. Ondrejka
(University of Veterinary Medicine and Pharmacy, Košice, Slovak Republic)

Poster 115

'Squalene adjuvant formulation with β -carotene I. Stability characteristics'

J. Süli, A. Ondrejková, J. Harvanová and R. Ondrejka
(University of Veterinary Medicine and Pharmacy, Košice, Slovak Republic)

Poster 116

'Lipoid adjuvant formulations for mucosal antirabies immunisation'

R. Ondrejka, J. Süli and A. Ondrejková
(University of Veterinary Medicine and Pharmacy, Košice, Slovak Republic)

Poster 117

'Solution to terminal sterilization of nanoemulsion adjuvants by combining high shear processing and filtration'

K. Jandrasitz¹, S. Mesite¹, Y. Su¹, R. Turmell², M. Folmsbee² and K. Marion²
(¹ Microfluidics International Corporation, Westwood, Massachusetts, USA; ² Pall Life Sciences, Port Washington, New York, USA)

Poster 118

'Novel liposomal formulation for *in vivo* expansion of CD8 T cells against whole protein antigens'

Jackson K. Eby, Adrienne V. Li, Yunwei Sun and Peter C. DeMuth
(Vedantra Pharmaceuticals, Inc., Cambridge, Massachusetts, USA)

Poster 119

'Nanoformulation of synergistic TLR ligands to enhance protective immunity against *Entamoeba histolytica*'

Mayuresh M. Abhyankar¹, Zannatun Noor¹, Lisa Barroso², David Lyerly², Christopher B. Fox³ and William A. Petri, Jr.¹
(¹ University of Virginia, Charlottesville, Virginia, USA; ² TechLab, Inc., Blacksburg, Virginia, USA; ³ Infectious Disease Research Institute, Seattle, Washington, USA)

Poster 120

'Systemic vaccination with a tuberculosis subunit vaccine in presence of retinoic acid leads to a better containment of the bacterial load in the lung'

Antonella Riccomi, Valentina Gesa, Elisa Cirelli, Else Marie Agger, Giovanni Piccaro, Carla Palma and Silvia Vendetti (Istituto Superiore di Sanità, Rome, Italy; Statens Serum Institute, Copenhagen, Denmark)

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